

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-22 (cancelled)

1 23 (new): A method for monitoring the progression of a plume of escaped
2 dangerous gas, said method comprising:
3 transmitting sensory data from a first sensor array comprising sensors capable of
4 producing a first response in the presence of a chemical stimulus to a remote location;
5 transmitting physical data from a second sensor array comprising sensors capable
6 of producing a second response in the presence of a physical stimulus to a remote location,
7 wherein said physical data is generated by a sensor of said second sensor array selected from the
8 group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor
9 and combinations thereof; and
10 processing said sensory and physical data at said remote location, thus monitoring
11 the progression of said plume.

1 24 (new): A method of monitoring an environment surrounding a nuclear
2 facility, said method comprising:
3 transmitting sensory data from a first sensor array comprising sensors capable of
4 producing a first response in the presence of a chemical stimulus to a remote location;
5 transmitting physical data from a second sensor array comprising sensors capable
6 of producing a second response in the presence of a physical stimulus to a remote location,
7 wherein said physical data is generated by a sensor of said second sensor array selected from the
8 group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor
9 and combinations thereof; and

10 processing said sensory and physical data at said remote location, thus monitoring
11 said environment.

1 25 (new): A method of detecting the presence of explosive materials, said
2 method comprising:
3 transmitting sensory data from a first sensor array comprising sensors capable of
4 producing a first response in the presence of a chemical stimulus to a remote location;
5 transmitting physical data from a second sensor array comprising sensors capable
6 of producing a second response in the presence of a physical stimulus to a remote location,
7 wherein said physical data is generated by a sensor of said second sensor array selected from the
8 group consisting of an optical sensor, a mechanical sensor, a radiation sensor, a thermal sensor
9 and combinations thereof; and

10 processing said sensory and physical data at said remote location, thus detecting
11 the presence of explosive materials.

1 26 (new): The method according to claim 23, 24 or 25, further comprising
2 employing a sensor selection algorithm to determine sensors in said first array.

1 27 (new): The method according to claim 23, 24 or 25, further comprising
2 selecting each sensor of said first sensor array from the group consisting of a bulk conducting
3 polymer film, a semiconducting polymer sensor, a surface acoustic wave device, a fiber optic
4 micromirror, a quartz crystal microbalance, a conducting/nonconducting regions sensor, a dye
5 impregnated polymeric coatings on optical fiber and combinations thereof.

1 28 (new): The method according to claim 23, 24 or 25, wherein said monitoring
2 includes monitoring a leakage of volatile gases.

1 29 (new): The method according to claim 23, 24 or 25, wherein said monitoring
2 includes monitoring emission levels.

1 30 (new): The method according to claim 23, wherein said monitoring includes
2 tracking and the progression of a plume of gas.

1 31 (new): The method according to claim 23 or 24, wherein said monitoring
2 includes monitoring a perimeter.

1 32 (new): The method according to claim 23, 24 or 25, wherein said monitoring
2 includes monitoring gases selected from the group consisting of ambient air, combustible gases,
3 natural gas, hazardous leaks, illegal substances, natural gas, smoke, anesthesia gas, sterilization
4 gas, and combinations thereof.

1 33 (new): The method according to claim 23, 24 or 25, wherein said monitoring
2 includes detecting, quantifying, classifying or combinations thereof.

1 34 (new): The method according to claim 23, 24 or 25, further comprising taking
2 corrective measures.

1 35 (new): The method according to claim 34, wherein said taking corrective
2 measures comprises notifying an observer.

1 36 (new): The method according to claim 35, wherein said notifying comprises
2 providing a visual or an audible alarm.